dark mass. He thinks that the triple phosphate crystals are the result of decomposition of urea, and that the cause of death is uræmia.—*Journ. Anat. and Phys.*, November, 1872; from *Centralblatt*, No. 44, 1872.

8. *Supernumerary Mammæ.*—Dr. P. D. **Handyside** relates (*Journal Anat. and Phys.*, November, 1872) two cases of quadruple mammæ, the lower being rudimentary, in two adult brothers. He states that Dr. A. Mitchell informed him that he had seen a similar case of quadruple mammæ in a farm servant, aged twenty-seven.

Supernumerary mammæ in males are very rare, but less so in females. Dr. **Robert**, of Marseilles, communicated to the Academy of Sciences, a case of a woman, who in addition to two mammæ in the natural situation, had a third in the left groin (see number of this Journal for August, 1828, p. 412). Dr. **Robert Lee** read before the Royal Medical and Chirurgical Society, in 1838, a case of a female who had four mammæ; the two lower were fully developed, and there was abundance of milk in them; the two upper were smaller and the nipples small and flat, but when gently pressed a milky fluid exuded (see number of this Journal for May, 1838, p. 172). Dr. Lee refers to various other cases of supernumerary mammæ in females (see *Trans. Royal Med. Chirurg. Soc.*, vol. iii., second series, p. 266 *et seq.*, and *Dict. des Sciences Médicales*, tom. xxxiv. pp. 527 and 529). In one case five mammæ existed.

MATERIA MEDICA, GENERAL THERAPEUTICS, AND PHARMACY.

9. *Researches on the Action of Hyoscyamia.*—The following are the conclusions drawn by Dr. **Oulmont** from his researches on the action of hyoscyamia:—

"I. Hyoscyamia represents all the active principles of hyoscyamus. The fixity of its composition gives to the results which we obtain from its use a precision which hyoscyamus in substance does not yield in the same degree.

"II. Hyoscyamia should be given at first in weak doses ($\frac{1}{32}$ grain daily), either in pills or by hypodermic injection. We may gradually increase the dose to five or six times this quantity.

"III. The remedy must be continued even if there are slight symptoms of poisoning, such as dryness of the throat and dilated pupils. But if the symptoms become grave, we must suspend it. These symptoms are temporary, and disappear in a few hours.

"IV. Hyoscyamia exerts a narcotic action on man. It is efficacious against pain, and particularly against neuralgia; but its power is less than that of opium and of belladonna.

"V. Hyoscyamia exerts a favourable action in spasmodic and convulsive neuroses. It cures mercurial trembling in cases where every other remedy had failed. It has produced a notable improvement in senile tremour and paralysis agitans.

"VI. Its action in locomotor ataxy is null.

"VII. In traumatic tetanus, although the patient died, this remedy produced a sufficiently notable remission of the symptoms to leave the question of its power still open and to call for new experimentation."—*Practitioner*, Jan. 1873, from *Bulletin de Thérapeutique*, Dec. 15, 1872.

10. *Influence of Belladonna on Secretion.*—**Keuchel** (*Das Atropin und die Hemmungsnerven.* Inaug. Diss. Dorpat, 1863) found that the dryness of the fauces, which followed the use of belladonna or atropia, is due to paralysis of the chorda tympani, which is the nerve regulating the secreting function of the submaxillary gland. This nerve contains two sets of fibres, one of which, as Ludwig has shown, acts on the gland-cells, and causes them to secrete;

while the other set, according to Bernard, induces dilatation of the arteries of the gland, and thus supplies more abundant material for secretion to the cells of the gland. Keuchel did not determine whether atropia arrested secretion by paralyzing the true secreting fibres in the chorda, or by destroying the power of the vaso-inhibitory fibres, and thus preventing a sufficient quantity of blood to supply the increased secretion from being furnished to the gland. Heidenheim (*Pflüger's Archiv*, v. 40) has investigated this question, and finds that, when the chorda tympani is irritated after the injection of atropia, no saliva is secreted by the submaxillary gland, but its vessels become dilated as usual. This shows that the arrest of secretion is entirely due to paralysis of the true secreting fibres in the chorda tympani, and not of the vaso-inhibitory ones. The experiment also affords a convincing proof of the separate existence of these two sets of fibres. Irritation of the sympathetic caused secretion after the injection of atropia, and the termination of the sympathetic filaments in the gland must therefore have a different relation to the secreting cells from those of the chorda tympani. When the paralysis of the chorda tympani which atropia produces is removed by physostigma, irritation of this nerve will again cause secretion. Sometimes, however, the secretion again stops, but this is due to quite a different cause from its arrest by atropia. The physostigma, as has already been said, restores the power of the secreting fibres, but it at the same time causes such contraction of the vessels that they do not dilate when the chorda tympani is irritated; and the supply of blood to the secreting cells is therefore too scanty to supply them with sufficient material for secretion. Physostigma also stimulates the roots of the chorda tympani in the brain and causes salivation, which ceases when the chorda tympani is divided. Nicotia and digitalin also stimulate secretion in the same way as physostigma, but large doses of nicotia paralyze the chorda. Dr. Sydney Ringer (*Practitioner*, August and October, 1872) finds that belladonna or atropia can prevent or check sweating, whether this be due to external warmth or to disease. When it is the result of disease, the subcutaneous injection of $\frac{1}{200}$th of a grain of atropia is generally sufficient to arrest it for one night. The dose does not dilate the pupils, but it produces dryness of the fauces. Stramonium has a similar effect.

Ringer also mentions (*Handbook of Therapeutics*, 2d ed. p. 361) that belladonna arrests the secretion of the mammary glands. It would thus appear probable that there may be special secreting nerves of the sudoriferous and mammary glands, of a similar kind to those contained in the chorda tympani, although the existence of such nerves has not yet been demonstrated. The fact that the secretion of these glands is arrested by the local application of belladonna, seems to indicate that the arrest is due to paralysis of the ends of the nerves in the gland, just as in the case of the chorda tympani.—*London Med. Record*, Jan. 15, 1873.

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11. *Action of Digitalis on the Bloodvessels.*—Drs. BRUNTON and MEYER contribute to the *Journal of Anatomy and Physiology* (November, 1872) an instructive paper on this subject. They conclude, first, that digitalin causes contraction of the arterioles. This is proved by the small height of the pulse-wave, and by its descent becoming more gradual after the injection notwithstanding the increased blood-pressure. Second, that the slowing of the pulse is probably due in part to the increased blood-pressure which results from the contraction of the arterioles.

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12. *Action of Ergot.*—HANDELIN has investigated this subject under the direction of Professor Schmiedeberg. He finds that an aqueous extract of ergot is much more active than an alcoholic extract. Before injecting the aqueous extract into the veins, he neutralized it with sodium carbonate. Small doses caused anæsthesia and loss of the power of co-ordination; larger ones produced paralysis both of voluntary and reflex motions. The peripheral nerves were unaffected, and the paralysis was, therefore, due to an affection of the nerve-centres. During paralysis, convulsions and myosis were observed. The pulse is at first quickened, but afterwards its rate steadily decreases till death

occurs. Small doses cause the blood-pressure to sink temporarily; large doses, permanently. The active principle is soluble in water, and is contained in the aqueous extract, for the effects produced by the injection of the aqueous extract correspond closely to those observed by Arnal and Wright after poisoning by ergot in substance. It seems not to be soluble in alcohol, or only to a slight extent, as ergot loses none of its activity by being extracted with alcohol. The alcoholic extract, however, causes vomiting. Klebs found dilatation of the pupil, rise of arterial pressure, and convulsions, instead of diminished pressure and myosis; and these differences Handelin is inclined to attribute to the different preparations employed. The author was unable to isolate the active principle from the aqueous extract; and, when mercuric chloride or tannic acid are used as precipitants, decomposition is invariably produced; so that it is impossible that the ecbolin and ergotin of Wenzell can be the active principles.—*Lond. Med. Record*, Jan. 8, 1873, from *für Kenntniss des Mutterkorns, in physiologisch-chemischer Beziehung*, Dorpat, 1871.

13. *Apomorphia.*—The evidence in favour of the valuable emetic properties of apomorphia has received an important addition from the observations of Dr. SIEBERT (*Archiv der Heilkunde*, December, 1871; and *Gazette Hebdomadaire*, No. 22, 1872, p. 366). He finds that this agent does not produce any effect on the digestive organs except the simple production of emesis. After its injection under the skin the pulse becomes irregular and slightly accelerated, and these changes are most pronounced at the moment of nausea and before vomiting, while after vomiting slowing takes place. In short, apomorphia affects the circulation in very much the same way as tartar emetic and ipecacuanha; a similarity that is further shown by the lowering of the temperature which succeeds the emesis. It differs from these substances, however, in being altogether destitute of irritant property; its injection under the skin does not produce inflammation, and neither diarrhœa nor disturbance of digestion follows its administration. Dr. Siebert found that the minimum quantity requisite to produce emesis by subcutaneous injection is, in man, from 0.09 gr. to 0.1 gr., in cats 0.3 gr., and in dogs 0.015 gr. to 0.03 gr. He could not discover the maximum dose that can be given to cats and dogs without producing injurious effects, because even when doses 80 or 100 times as large as the above were given, there were no symptoms of cerebral disturbance. He believes that in man the dose may, without risk, be increased to 0.2 or even 0.6 gr. When given by the stomach much larger doses are of course required. Thus, a man of forty-nine years took 0.95 gr. and only nausea resulted, and when he took 1.5 gr. emesis occurred without any injurious effects.—*Journ. Anat and Phys.*, November, 1872.

14. *The Combined Effects of Opium Alkaloids and Chloroform.*—The statement of CLAUDE BERNARD and NUSSBAUM (see number of this Journal for January, 1870, p. 240), that by administering morphia and chloroform in combination very complete anæsthesia may be obtained with a quantity of chloroform greatly less than is required when chloroform is alone given, has received confirmation and extension from the observations of MM. Labbé and Guyon and Dr. Rabuteau. The former observers mention (*Journal de Pharmacie et de Chimie*, Mai, 1872, p. 398) that among their other results they found that this combination produces an anæsthesia of long duration, which may be prolonged still further by successive small doses of chloroform. They believe, therefore, that by this combination the risk of fatal accidents is greatly diminished. Dr. Rabuteau, towards the termination of his paper on the opium active principles (*Journ. de l'Anat. et Phys.*, No. 3, 1872, p. 302), expresses his adherence to the statements of previous observers, and adds that nearly all the opium alkaloids, even those which are not soporifics, are able to continue the analgesic action of chloroform, because nearly all of them possess the power of lessening sensibility. Narcotine, however, is not able to do so; but he has found that narceia is nearly as efficient as morphia, while codeia and papaverin only feebly continue the action of chloroform.—*Journ. Anat. and Phys.*, November, 1872.

15. *Therapeutic Properties of Bromide of Potassium.*—Dr. AUGUSTE VOISIN has obtained from the Academy of Medicine the Jourieux prize of 1871, for a memoir entitled, "*Etude historique et therapeutique sur le Bromure de Potassium.*" This memoir will be published in full in the "*Mémoirs*" of the Academy, and in the mean time the author has furnished an extract from it to the *Archives Générales de Méd.* (January and February, 1873).

Dr. V. regards the action of the bromide of potassium as twofold: 1, a sedative action on the spinal cord and medulla oblongata, and 2, a constrictive action on the muscular fibres and capillaries, which is seen in the anæmia of the organs and tissues which it produces. The first action explains its efficacy in the states of disease accompanied by excitement of the cord and medulla, such as epilepsy, chorea, simple and traumatic tetanus, spinal irritation of hysterical patients, painful paraplegia of nervous females, and pains and cramps of spinal origin. It is, on the other hand, useless in pains of peripheral origin, gastralgia, and in general in painful conditions which have not a special origin. By its second action, that of rendering anæmic the tissues, it is useful in simple congestive visceral affections, and where no neoplastic effusion exists, as in simple meningo-cerebral congestion; but it is useless in chronic diffused meningo-encephalitis, and other inflammatory affections accompanied with plastic exudation or proliferation of tissue. This action makes it useful in spermatorrhœa, and in diminishing buccal, pharyngeal, and vaginal secretion, as in simple leucorrhœa.

Its efficacy in epilepsy is incontestable, even where a great number of attacks have occurred (4000), or when the disease is of long duration (fifteen years). Cure is interfered with by organic causes—hereditary tuberculosis and alcoholism, malformation of the brain, onanism, plastic effusions, sclerosis, clots, softening, conditions often causing loss of special sense or motor power. Menstrual epilepsy is less favourably affected by the bromide. On this subject M. Voisin gives ample details. As to tetanus, he observes that most of the wounded soldiers at the Saltpêtrière during the siege of Paris, who had tetanus, suffered for some days previously from clonic spasm of the limb when it was touched or during the dressings. Warned by this observation of soldiers in neighbouring wards, he administered the bromide in full doses in all such cases in his own wards (6 to 11 *grammes* a day). None suffered from tetanus, although one of them presented the first phenomena of tetanus for twenty-four hours. He relates three cases of well-marked traumatic tetanus, uninfluenced by chloral, in which cure was effected by bromide of potassium in an initial dose of 8 *grammes* (120 grains), and three subcutaneous injections of morphia during the day in the right thigh.

Bromide of ammonium has not seemed to him to produce quite the same effects as bromide of potassium. The bromide of sodium he regards as having an identical action. The bromide of cadmium produces vomiting, which renders its administration impossible.

M. Voisin insists that, vast as is the field of usefulness of bromide of potassium, its employment must be restricted to cases in which the spinal cord is excited, and needs to be tranquillized; and to those in which there is reason for exercising a constrictive action on the capillary vessels and depriving the tissues of blood. Beyond this range of cases, the employment of the bromide is, he thinks, out of place; and it would injure the reputation of this medicine to employ it against all painful sensations, of whatever character and whatever origin they may be.

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16. *Action of the Bromides in Pruriginous Affections.*—Dr. GUÉNEAU (de Mussy) extols (*Gazette Médicale*, No. 48, 1872) the efficacy of the bromides applied locally in pruriginous affections of the external and internal integuments. It recommends their use, especially in pruritus vulvæ. He employs the bromides either in ointment or solution.—*Revue des Sciences Médicales*, Jan. 1873.